



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,973	09/08/2006	Senzo Kobayashi	F06-443-US	4963
21254 7590 04/29/2009 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817				
EXAMINER				
BOLOTIN, DMITRIY				
ART UNIT		PAPER NUMBER		
2629				
MAIL DATE		DELIVERY MODE		
04/29/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/591,973

**Applicant(s)**

KOBAYASHI, SENZO

**Examiner**

Dmitriy Bolotin

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/08)  
Paper No(s)/Mail Date 09/08/2006, 12/07/2006, 03/03/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_



### DETAILED ACTION

It would be of great assistance to the Office if all incoming papers pertaining to a filed application carried the following items:

1. Application number (checked for accuracy, including series code and serial no.).
2. Group art unit number (copied from most recent Office communication).
3. Filing date.
4. Name of the examiner who prepared the most recent Office action.
5. Title of invention.
6. Confirmation number (See MPEP § 503).

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1 – 3** are rejected under 35 U.S.C. 102(e) as being anticipated by Aoki et al. (US 2005/0110702).

As to **claim 1**, Aoki discloses an information display apparatus characterized by comprising a pair of main ribs located at both ends (sections 510 located at both ends of folding fan configuration 500 of fig. 5), a plurality of intermediate ribs interposed

between the main ribs (sections 510 located other than at both ends of folding fan configuration 500 of fig. 5), a pivot (connector 506 of fig. 5) for turnably fixing the main ribs and the intermediate ribs in a root portion (pivot point 504 of fig. 5), and a fan face (display membrane 400 of fig. 5) joined to the intermediate ribs between the pair of main ribs as well as openably/closably bent like bellows (display membrane 400 of fig. 5 can extend or collapse to form a fan, [0048]), wherein at least a part of the fan face comprises a thin film flat display formed on a flexible and bendy thin film or a thin film flat display formed on a flexible and bendy thin film is disposed to at least a part of the fan face (display membrane 400 of fig. 5 comprises polymer dispersed liquid crystal, organic light emitting diodes or electrophoretic display, [0038]).

As to **claim 2**, Aoki discloses an information display apparatus characterized by comprising a pair of main ribs located at both ends (sections 510 located at both ends of folding fan configuration 500 of fig. 5), a plurality of intermediate ribs interposed by the main ribs (sections 510 located other than at both ends of folding fan configuration 500 of fig. 5), a pivot (connector 506 of fig. 5) for turnably fixing the main ribs and the intermediate ribs in a root portion (pivot point 504 of fig. 5), and a fan face (display membrane 400 of fig. 5) joined to the intermediate ribs between the pair of main ribs as well as openably/closably bent like bellows (display membrane can extend or collapse to form a fan, [0048]), wherein in an unfolded state of the fan face, a thin film flat display formed on a flexible and bendy thin film (display membrane 400 of fig. 5 comprises polymer dispersed liquid crystal, organic light emitting diodes or electrophoretic display, [0038]) is made to a flat surface and joined to the vertex portions of mountains of the fan

face so that the mountains of the fan face are joined in at least a part of the fan face (display membrane 400 of fig. 5 can extend or collapse to form a fan, [0048]), and when the fan face is folded, the thin film flat display is folded to valleys of the fan face along it in association with the folding operation (display membrane 400 of fig. 5 can extend or collapse to form a fan, [0048 – 0050]).

As to **claim 3** (dependent on 1) and **claim 17** (dependent on 2), Aoki discloses an information display apparatus, wherein the thin film flat display comprises an electronic paper (display membrane 400 of fig. 5 comprises electrophoretic display also known as “electronic paper”, [0038]).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. **Claims 4 – 8, 11 – 14 and 18 – 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki in view of Fujieda et al. (US 2002/0070910).

As to **claim 4** (dependent on 1), **claim 5** (dependent on 1), **claim 6** (dependent on 1), **claim 18** (dependent on 2), **claim 19** (dependent on 2) and **claim 20** (dependent on 2), Aoki discloses an information display apparatus heaving a main rib (sections 510 located at both ends of folding fan configuration 500 of fig. 5) and an intermediate ribs (sections 510 located other than at both ends of folding fan configuration 500 of fig. 5).

However, Aoki fails to disclose a keyboard disposed to a main rib, keyboards comprising touch switches disposed to intermediate ribs, and a computer system for information processing disposed to the main rib.

In the same field of endeavor, Fujieda discloses a keyboard (operation key 114 of fig. 1), keyboards (operation key 114 of fig. 1) comprising touch switches (ten-key pad, [0050]), and a computer system for information processing (inherent for a mobile terminal i.e. telephone, [0054]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Aoki by providing a keyboard and a computer system on the main rib and touch switches on the intermediate ribs, so as to provide mobile terminal features to a device heaving a large display (Fujieda, [0007]).

As to **claim 7** (dependent on 1), Aoki discloses an information display apparatus heaving a main rib (sections 510 located at both ends of folding fan configuration 500 of fig. 5) and an intermediate ribs (sections 510 located other than at both ends of folding fan configuration 500 of fig. 5).

However, Aoki fails to disclose an information display apparatus, wherein a microphone and a speaker are mounted on the main rib, an antenna is mounted on the main rib or an intermediate rib is used as an antenna to permit communication of audio, image or data to the outside.

In the same field of endeavor, Fujieda discloses wherein a microphone (microphone 113 of fig. 1) and a speaker (speaker 112 of fig. 1), an antenna (inherent for a mobile terminal i.e. telephone, [0054]) which is used as an antenna to permit communication of audio, image or data to the outside (inherent for a mobile terminal i.e. telephone, [0054]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Aoki by providing a speaker, a microphone and an antenna, so as to provide mobile terminal features to a device heaving a large display (Fujieda, [0007]).

As to **claim 8**, Aoki discloses an information display apparatus comprising: a thin film flat display formed on a flexible thin film (display membrane 400 of fig. 5 comprises polymer dispersed liquid crystal, organic light emitting diodes or electrophoretic display, [0038]); and hold means (rib section 518 of fig. 5) for holding the thin film flat display



(display membrane 400 of fig. 5) from a back surface (as shown in fig. 5) such that it is joined to front surfaces of a plurality of rigid rectangular substrates (rib section 518 of fig. 5) when they are arranged on a flat surface (sections 510 of fig. 5);

Aoki fails to disclose a case for accommodating the thin film flat display; and a take-up unit disposed in the case for taking up and accommodating the thin film flat display together with the holding means in the case using a direction parallel with a long side of the substrate as an axis.

In the same field of endeavor, Fujieda discloses a case (housing 100 of fig. 1) for accommodating the thin film flat display (display 120 of fig. 2); and a take-up unit (slit 116 of fig. 1) disposed in the case (housing 100 of fig. 1) for taking up and accommodating the thin film flat display (display 120 of fig. 2) together with the holding means (supporting device 130 of fig. 2) in the case using a direction parallel with a long side of the substrate as an axis (as shown in fig. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Aoki by providing a case with a take-up unit, so as to protect the display while providing large display area and minimal size (Fujieda, [0007]).

As to **claim 11** (dependent on 8), Aoki discloses an information display apparatus, wherein the thin film flat display comprises an electronic paper (display membrane 400 of fig. 5 comprises electrophoretic display also known as "electronic paper", [0038]).

As to **claim 12** (dependent on 8), **claim 13** (dependent on 8), and **claim 14** (dependent on 8), Aoki fails to disclose an information display apparatus, wherein a keyboard is disposed to the case, a computer system for information processing is disposed to the case and wherein the case accommodates a microphone, a speaker, and an antenna to permit communication of audio, image or data to the outside.

In the same field of endeavor, Fujieda discloses an information display apparatus, wherein a keyboard (operation key 114 of fig. 1) is disposed to the case (housing 100 of fig. 1), a computer system for information processing (inherent for a mobile terminal i.e. telephone, [0054]) is disposed to the case (housing 100 of fig. 1) and wherein the case (housing 100 of fig. 1) accommodates a microphone (113 of fig. 1), a speaker (112 of fig. 1), and an antenna (inherent for a mobile terminal i.e. telephone, [0054]) to permit communication of audio, image or data to the outside (inherent for a mobile terminal i.e. telephone, [0054]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Aoki by providing a case with above mentioned mobile terminal features, so as to provide mobile terminal features to a device heaving a large display (Fujieda, [0007]).

6. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki in view of Fujieda and Moore (US 5,472,255).

As to **claim 9** (dependent on 8), Aoki in view of Fujieda discloses an information display apparatus. However, Aoki in view of Fujieda fails to disclose an apparatus, characterized in that a magnet is disposed to at least one of two confronting side walls of adjacent substrates.

In the same field of endeavor, Moore discloses an apparatus characterized in that a magnet (magnet 108 of fig. 8) is disposed to at least one of two confronting side walls of adjacent substrates (panels 42 and 44 of fig. 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Aoki in view of Fujieda by providing magnets on adjacent substrates, so as to retain the shape in folded configuration (Moore, col. 4, lines 5 – 13).

7. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujieda in view of Maynard (US 6,072,154).

As to **claim 10**, Fujieda discloses an information display apparatus characterized by comprising: a thin film flat display (120 of fig. 2) formed on a thin film (substrate 22 of fig. 9); a case (housing 100 of fig. 1) for accommodating the thin film flat display (120 of fig. 2); an accommodation unit (slit 116 of fig. 1) disposed in the case (housing 100 of fig. 2) for accommodating the thin film flat display by taking up or folding it [0057], and said display can be folded or unfolded [0057].

Fujieda fails to disclose a thin film comprising at least one of flexible shape memory alloy, shape memory resin, shape memory alloy fiber, and shape memory resin fiber and heat means for heating the thin film flat display when it is accommodated or unfolded.

In the same field of endeavor, Maynard discloses a thin film (sheet 12 of fig. 1) comprising flexible shape memory alloy (col. 6, lines 16 – 35) and heat means (heating elements 14 of fig. 1) for heating the thin film (12 of fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Fujieda by providing shape memory alloy and heating means, so as to provide a shape memory device which can be selectively activated (Maynard, col. 1, lines 60 – 65).

8. **Claims 15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki in view of Maynard (US 6,072,154).

As to **claim 15** (dependent on 1) and **claim 16** (dependent on 15), Aoki discloses an information display apparatus. However, Aoki fails to disclose an apparatus, wherein the thin film comprises at least one of shape memory alloy, shape memory resin, shape memory alloy fiber, and shape memory resin fiber and characterized by comprising means for heating the thin film.

In the same field of endeavor, Maynard discloses the thin film (sheet 12 of fig. 1) comprises shape memory alloy (col. 6, lines 16 – 35) and characterized by comprising means for heating the thin film (elements 14 of fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Aoki by providing shape memory alloy and heating means, so as to provide a device which can be selectively activated to more the a single predetermined shape (Maynard, col. 1, lines 60 – 65).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Bolotin whose telephone number is (571)270-5873. The examiner can normally be reached on Monday-Friday, 8:00 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571)272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. B./  
Examiner, Art Unit 2629

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629